

Appl. No. 10/032,962
Amdt. dated July 10, 2006
Reply to Office Action of April 11, 2006

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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A balloon for a balloon dilatation catheter, comprising:
a balloon body having an expandable region and a balloon waist including an annular wall having a first end adjacent the expandable region, a second end and a length therebetween, the balloon waist including a plurality of voids formed in the annular wall such that the balloon waist has a material volume and a void volume created by the plurality of voids;
wherein the plurality of voids are configured such that the void volume proximate the second end is greater than the void volume proximate the first end of the balloon waist.
2. (Previously Presented) A balloon for a balloon dilatation catheter as in claim 1, wherein the balloon waist has a material volume per unit length, and wherein the plurality of voids reduce the material volume per unit length.
3. (Previously Presented) A balloon for a balloon dilatation catheter as in claim 2, wherein the material volume per unit length decreases in the distal direction.
4. (Previously Presented) A balloon for a balloon dilatation catheter as in claim 3, wherein the size, number and position of the plurality of voids are selected to cause the material volume per unit length to decrease in a distal direction.
5. (Currently Amended) A balloon for a balloon dilatation catheter as in claim 1, wherein a proximal balloon waist and a distal balloon waist each include a plurality of voids, wherein the plurality of voids are shaped and configured such that the balloon waists will have a reduced profile subsequent to thermal reformation.
6. (Cancelled)

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7. (Withdrawn) A balloon dilatation catheter as in claim 1, wherein the plurality of voids are wedge shaped.

8. (Previously Presented) A balloon for a balloon dilatation catheter as in claim 1, wherein the plurality of voids are circular.

9. (Withdrawn) A balloon dilatation catheter as in claim 1, wherein the plurality of voids are rectangular.

10. (Withdrawn) A balloon dilatation catheter as in claim 1, wherein the plurality of voids are diamond shaped.

11. (Currently Amended) A balloon for a balloon dilatation catheter, comprising:
a molded balloon, the balloon being molded to have an expandable region, a balloon waist and a length extending from a proximal end of the balloon waist to a distal end of the balloon waist, the balloon waist having a material volume per unit length and a void volume per unit length, and

means for altering the void volume per unit length over a substantial portion of the balloon waist prior to thermal reformation such that the void volume per unit length increases distally along a substantial portion of the length of the balloon waist [[to]] toward the distal end.

12. (Currently Amended) A balloon for a balloon dilatation catheter as in claim 11, wherein the material volume per unit length decreases from the proximal end [[to]] toward the distal end.

13. (Previously Presented) A balloon for a balloon dilatation catheter as in claim 11, wherein the void volume per unit length is controlled by the formation of a plurality of voids in the balloon waist.

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14. (Previously Presented) A balloon for a balloon dilatation catheter as in claim 13, wherein the size, number and position of the plurality of voids are selected to alter the void volume per unit length.

15. (Withdrawn) A balloon dilatation catheter as in claim 13, wherein the plurality of voids are wedge shaped.

16. (Previously Presented) A balloon for a balloon dilatation catheter as in claim 13, wherein the plurality of voids are circular.

17. (Withdrawn) A balloon dilatation catheter as in claim 13, wherein the plurality of voids are rectangular.

18. (Withdrawn) A balloon dilatation catheter as in claim 13, wherein the plurality of voids are diamond shaped.

19-28. (Cancelled)

29. (New) A balloon for a balloon dilatation catheter as in claim 3, wherein the material volume per unit length decreases in the distal direction along a majority of the length of the balloon waist.

30. (New) A balloon for a balloon dilatation catheter as in claim 29, wherein the void volume per unit length increases in a distal direction along a majority of the length of the balloon waist.

31. (New) A balloon for a balloon catheter, the balloon comprising:
an expandable portion; and

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a balloon waist, wherein the balloon waist includes a plurality of voids such that the balloon waist has a material volume configured such that the balloon waist will have a reduced profile over a substantial portion of the balloon waist subsequent to thermal reformation.

32. (New) A balloon catheter at an intermediate stage of catheter formation, the balloon catheter comprising:

an elongate tubular member having a proximal end, a distal end, and an outer surface;
and

a balloon including an expandable portion and a balloon waist, wherein at least a portion of the balloon waist overlays the outer surface of the elongate tubular member;

wherein the portion of the balloon waist which overlays the outer surface of the elongate tubular member includes a plurality of voids such that the balloon waist has a material volume configured such that the balloon waist will have a reduced profile over a substantial portion of the balloon waist subsequent to thermal reformation.

33. (New) The balloon catheter of claim 32, wherein the balloon waist has a material volume per unit length, and wherein the plurality of voids reduce the material volume per unit length.

34. (New) The balloon catheter of claim 33, wherein the material volume per unit length decreases in a distal direction.

35. (New) The balloon catheter of claim 34, wherein the size, number and position of the plurality of voids are selected to cause the material volume per unit length to decrease in the distal direction.

36. (New) The balloon catheter of claim 32, wherein the elongate tubular member is an inner tubular member extending through an outer tubular member.

37. (New) The balloon catheter of claim 36, wherein the balloon waist is a distal balloon waist.